Breeze Embedded Computing Client

User's Guide

Aug 2014

Disclaimer

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1 INTORDUCTION

Unreserved ticketing constitutes the major ticketing requirement of Indian Railways. The Embedded Computing Client ECC is a Thin Client based unreserved ticketing system developed to address this requirement with the following objectives.

- Computerized unreserved tickets
- Computerized Tickets for MST/QST and platform tickets
- Centralized Accounting
- Centralized database and system administration
- Centralized software release/ upgrades

This manual is intended for the users of ECC and provides the information needed to install and operate the ECC. Screenshots have been used wherever possible to improve understablity.

2 INSTALLATION

This chapter provides instructions to install and turn on ECC. Perform each step in order.

2.1 ECC Checklist

The ECC comes with the following items. Unpack the carton box and Check to make sure that you have the following items.

i. ECC (Thin Client)
ii. Mouse
iii. Mouse Pad
iv. Universal AC Adapter and power card
v. User's Manual CD.

2.2 General Conditions and Precautions

Make sure there is adequate space around the ECC for proper ventilation.
Make sure the AC power cord connect to a grounded AC outlet, which is closer to ECC and easily accessible.
Keep the ECC free of dust, moisture and exposure to direct Sun light.
Keep the ECC away from heat sources such as heater.

Position the ECC , Monitor and keyboard such that the system is ergonomically accessible to the user.
Do not use ECC near liquids or corrosive chemicals.
Do not place ECC near objects that create strong magnet fields.

2.3 Installing the ECC.

Place the Thin Client box, Monitor and Keyboard on a level surface.
Connect the keyboard to the Thin Client box to a USB port on the unit.
Connect the Mouse to a USB port on the unit.
Connect the Power adaptor to Thin Client unit.
Connect the LCD Monitor's video cable to the Thin Client unit.
Connect the power cord of the Monitor to the AC power out let.
Connect the power cord of the Thin Client Unit to the AC power out let.
Switch on the Monitor.
Switch on the Thin Client. The Power on Indicator located on the front will glow. You can see the boot message on the screen and the led's on the keyboard will blink.

Adjust the brightness and contrast of the Monitor to the desired intensity.
Adjust the Monitor such that the screen is at the desired viewing angle.

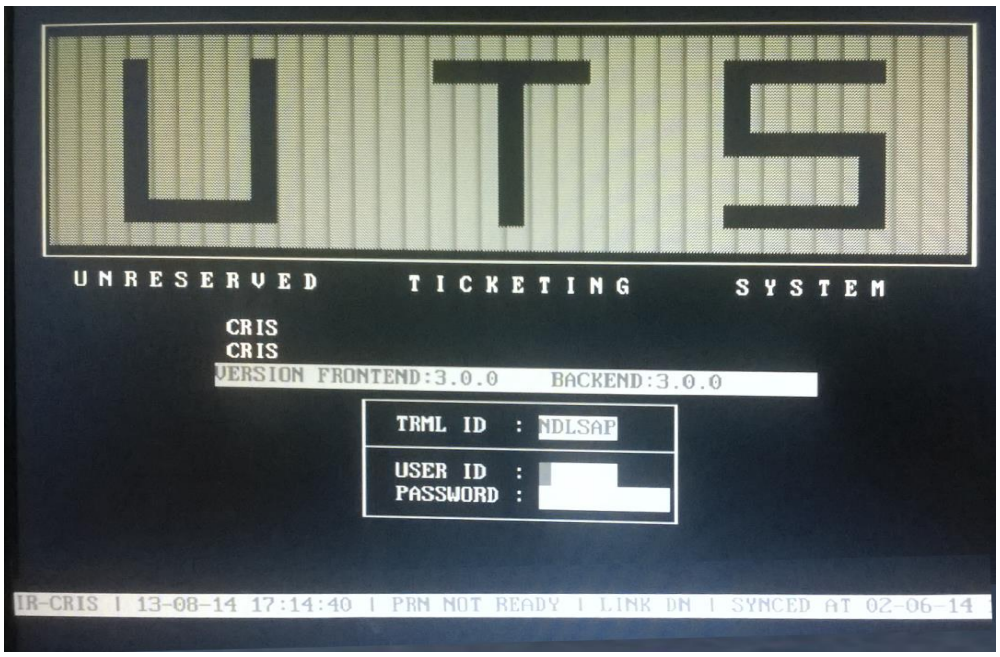
Use a RJ45 patch cord to connect the Thin Client unit to the local LAN.
Use the parallel printer cable provided with the parallel printer to connect to the parallel port on the unit, if parallel printer is used.
Use a serial printer cable to connect the Serial printer to the COM2 port on the unit, if serial printer is used.

3 BREEZE ECC CONFIGURATION

3.1 Breeze ECC Booting

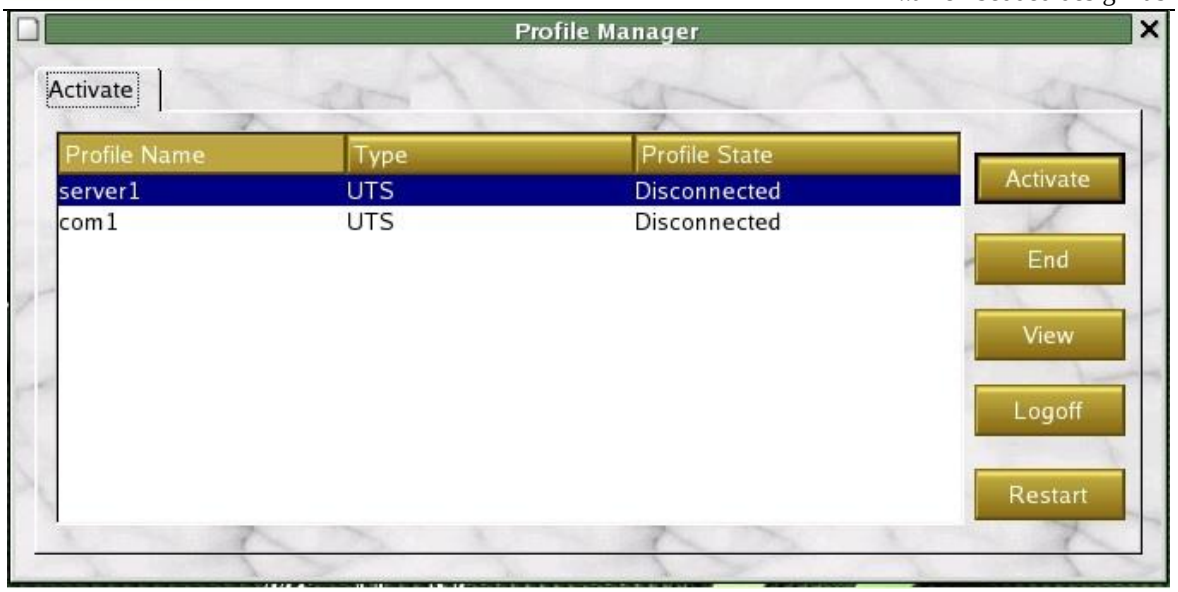
When the thin-client is switched on the Breeze booting appears on the screen.

After Boot-up the CRIS UTS Application automatically starts up in the 1st console (/dev/tty1) ctrl+Alt+F1
The login screen for the CRIS UTS Application is displayed as in image below



The PRS user will be logged-in automatically in the second console and the screen appears as in image below,

The profile manager would appear as shown below, as per the configuration.



The profile gets automatically connected to the configured Server

3.2 Invoking Setup Utility:

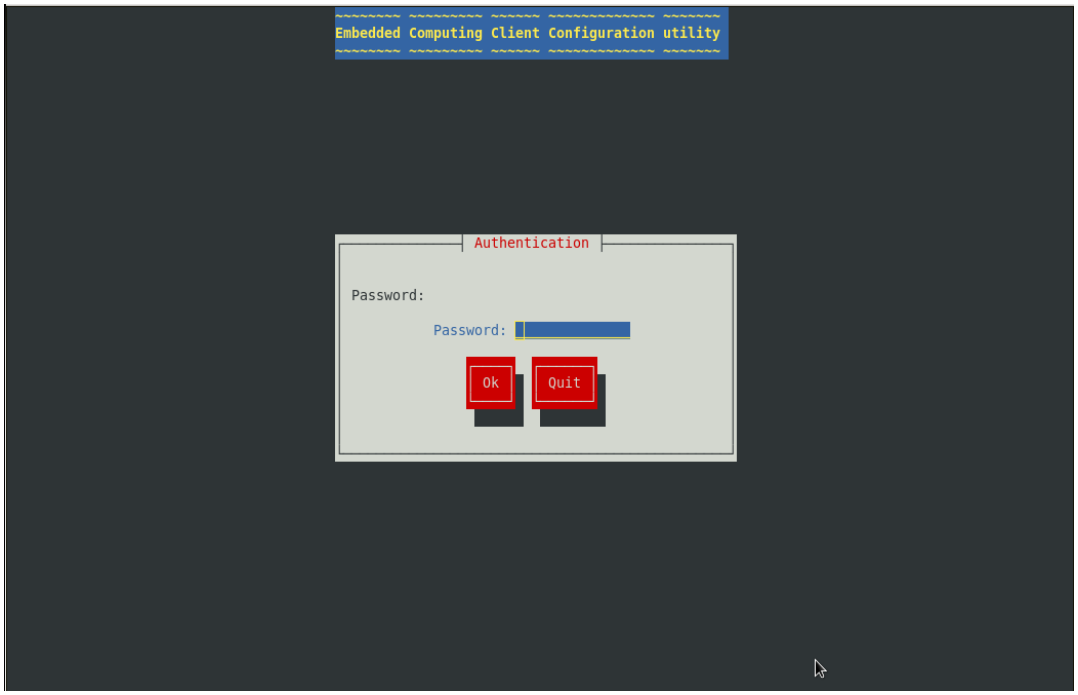
By logging in as root user and typing 'setup' in the command prompt as shown below the setup utility can be invoked.

Bash-3.00# **setup**

3.3 Setup utility

Enter the setup password to enter in to the Setup Menu to configure thin-client.The default password is set to "**setup123**".

Password Menu:

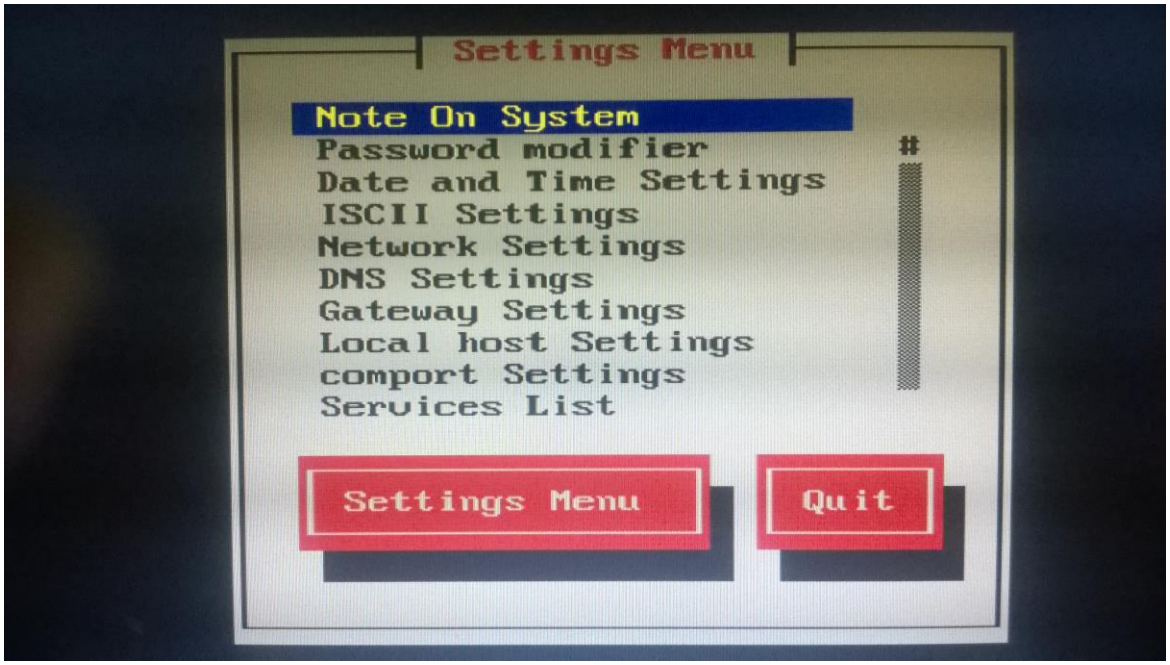


The parameters that can be configured through setup utility are as follows.

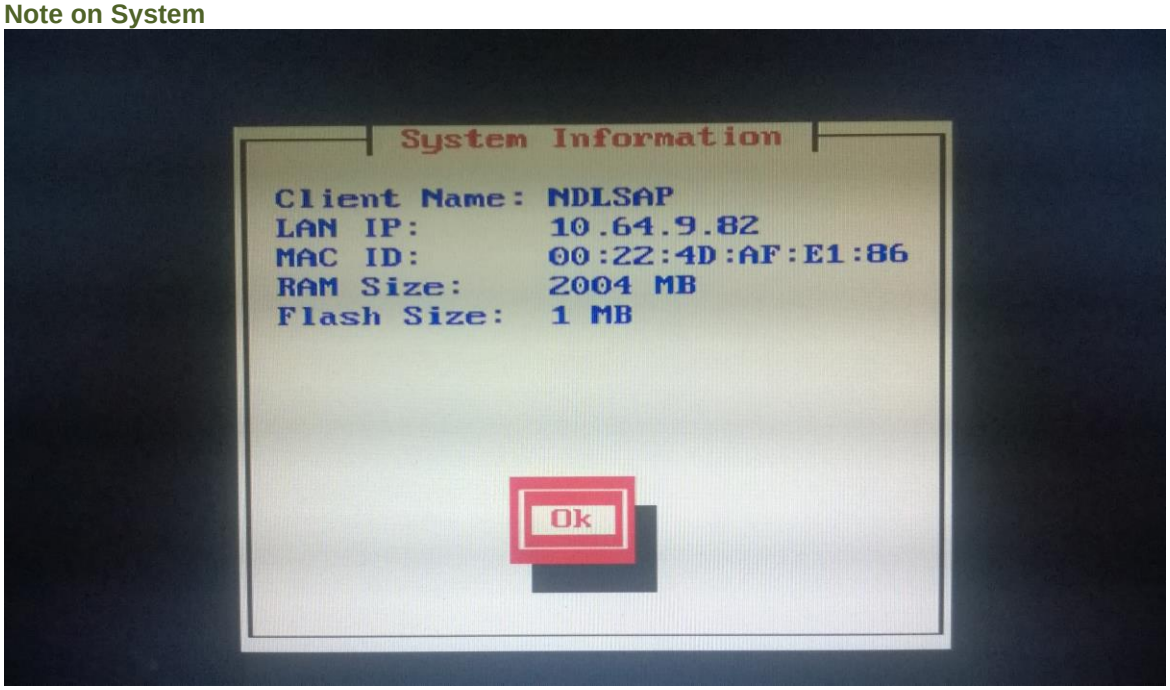
1. System Info
2. Modify Password.
3. Date and Time
4. ISCII Settings
5. Network Settings
6. DNS Settings
7. Gateway settings
8. Local Host Settings
9. Com port Settings
10. Services

Settings Menu

The configurations that can be set in the thin-client using the setup utility are shown in image below.



Note on System



The system information is provided by the image shown above.

Client Name
: Host name of the ECC

LAN IP
: IP Address of the ECC

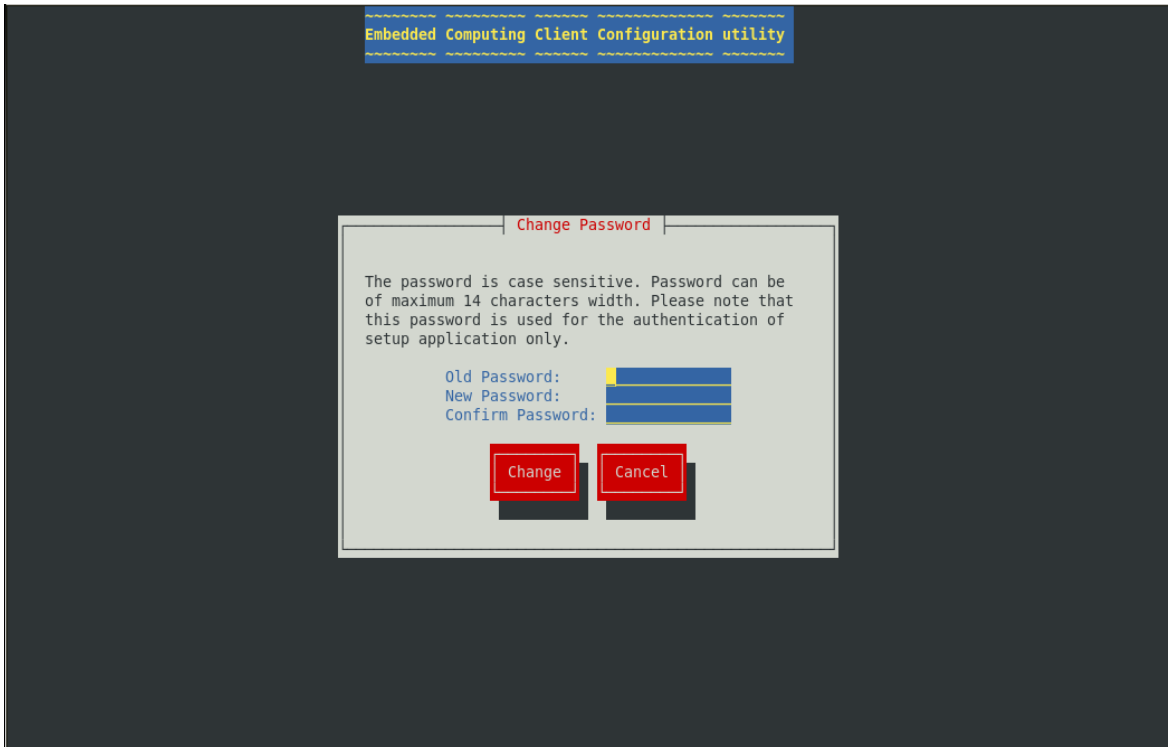
MAC ID
: MAC Address of ECC

RAM Size
: Total RAM Size installed in ECC

Flash Size
: Total Flash size of ECC

Change Password Page:

Change password page is used for modifying the password of the setup applications of admin. The system root password will not be changed.


Embedded Computing Client Configuration utility
Change Password
The password is case sensitive. Password can be of maximum 14 characters width. Please note that this password is used for the authentication of setup application only.
Old Password:
New Password:
Confirm Password:
Change
Cancel

Old Password

Provide the current working password

New Password

Provide the new password

Confirm Password

Re-enter the new password for confirmation..

Date and Time Configuration Page:

The system date and time can be configured using this page. The date and time set will get sync with the BIOS date and time.

Current Time

Input the time in hh:mm:ss (h=0-24,m=0-59,s=0-59)

Current Date

Input the date in dd/mm/yyyy format for example (01/01/2014)

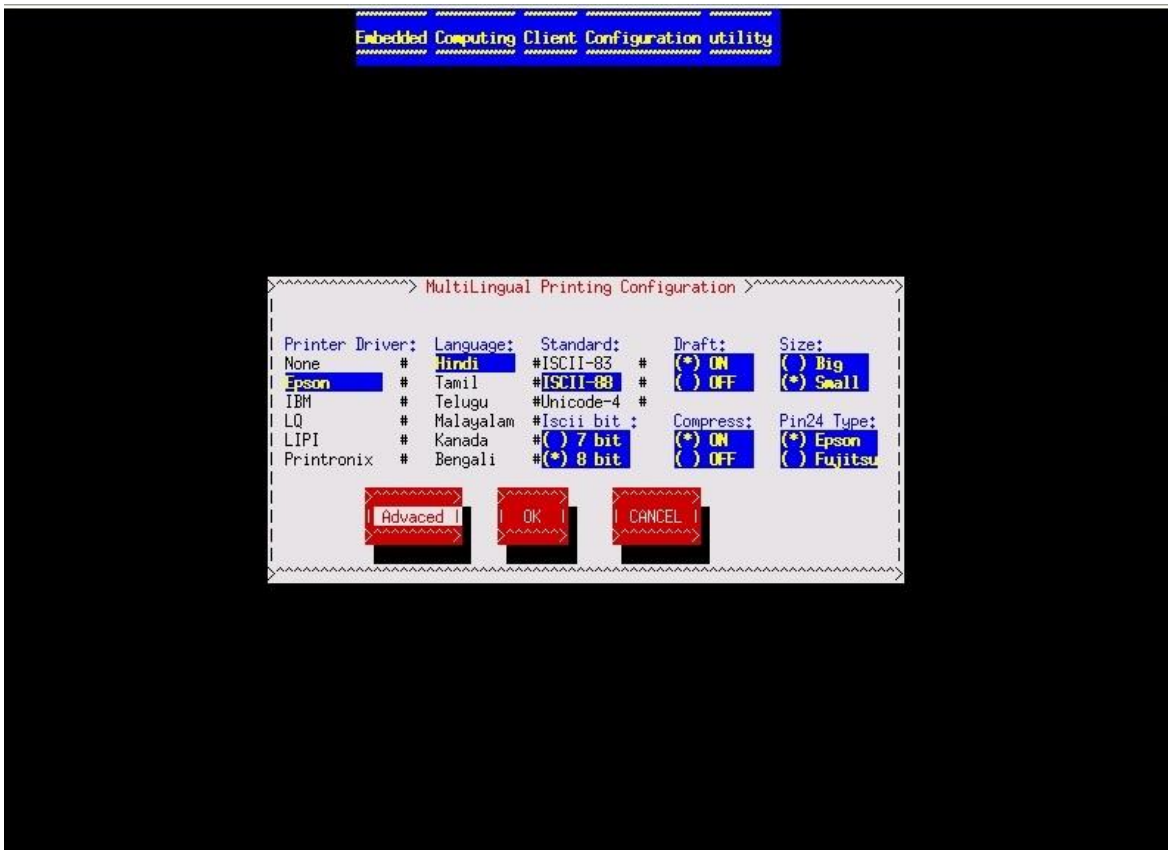
Remote Date Configuration:

Provide the rdate server IP in /etc/CRIS script as follows

RDATESERVER=<ip address>

ISCII Settings Page:

This page is used for configuring the client local ISCII printing:



Printer Driver

Select the appropriate printer driver for printing.

Language

Select the Printing Language for ISCII printing

ISCII Standard

Select the ISCII Standard either ISCII 83 or ISCII 88

Print Size

Select print size as big or small

Compress

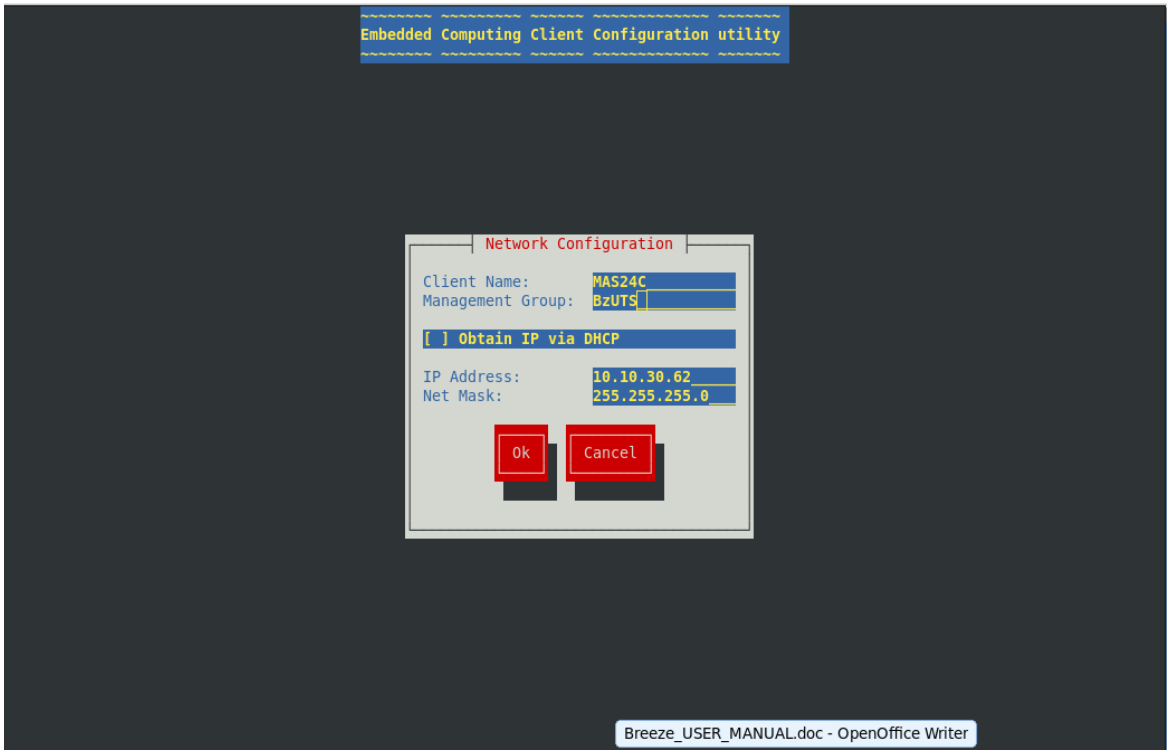
Switch On or off compression

Pin 24 type

Select pin 24 type

Network Settings Page:

This page is used for configuring the client network.



Client Name
Hostname of the ECC

Group
Group name of ECC, Used for Remote Management Software

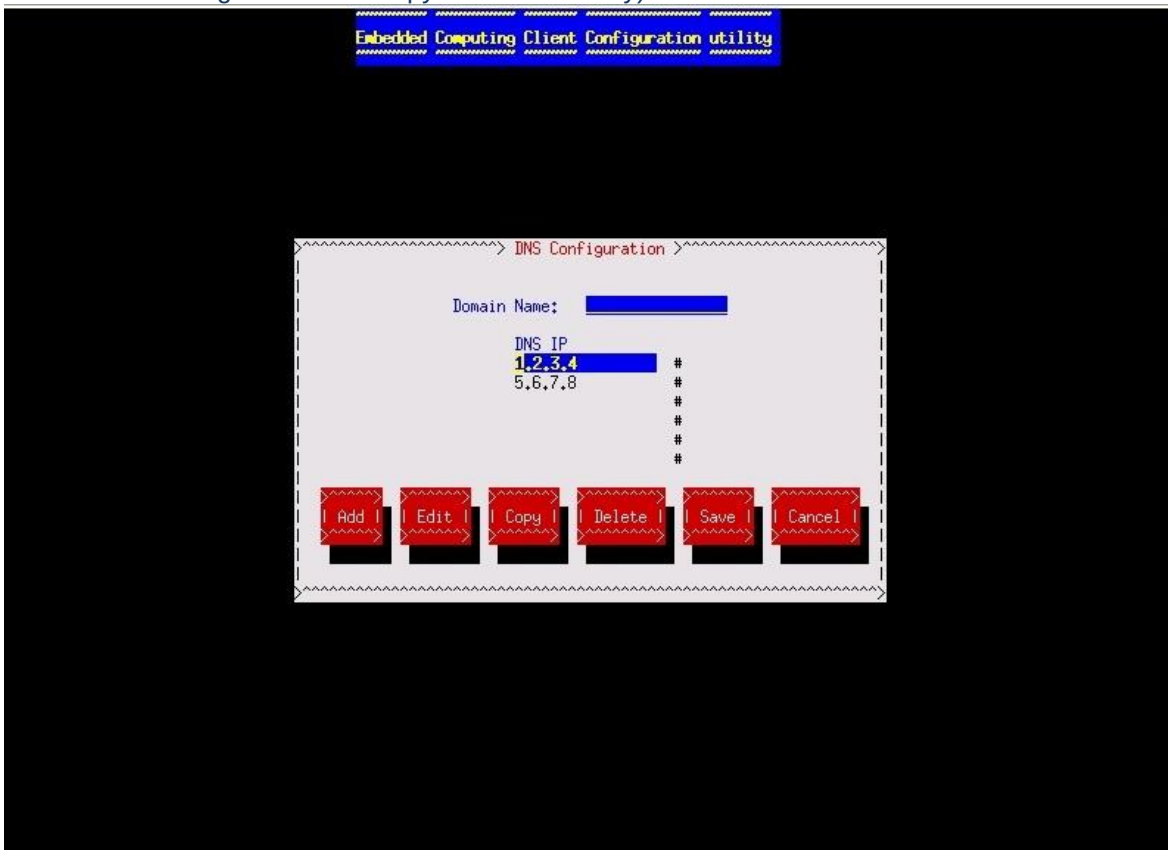
IP via DHCP
To Enable IP Via DHCP

IP Address
To provide static IP address

Net Mask
To provide a net mask of ECC

DNS Configuration Page:

Domain Name Server can be configured using this page. (For example: Add new entries, Delete/Edit existing entries and copy the current entry).



Domain Name

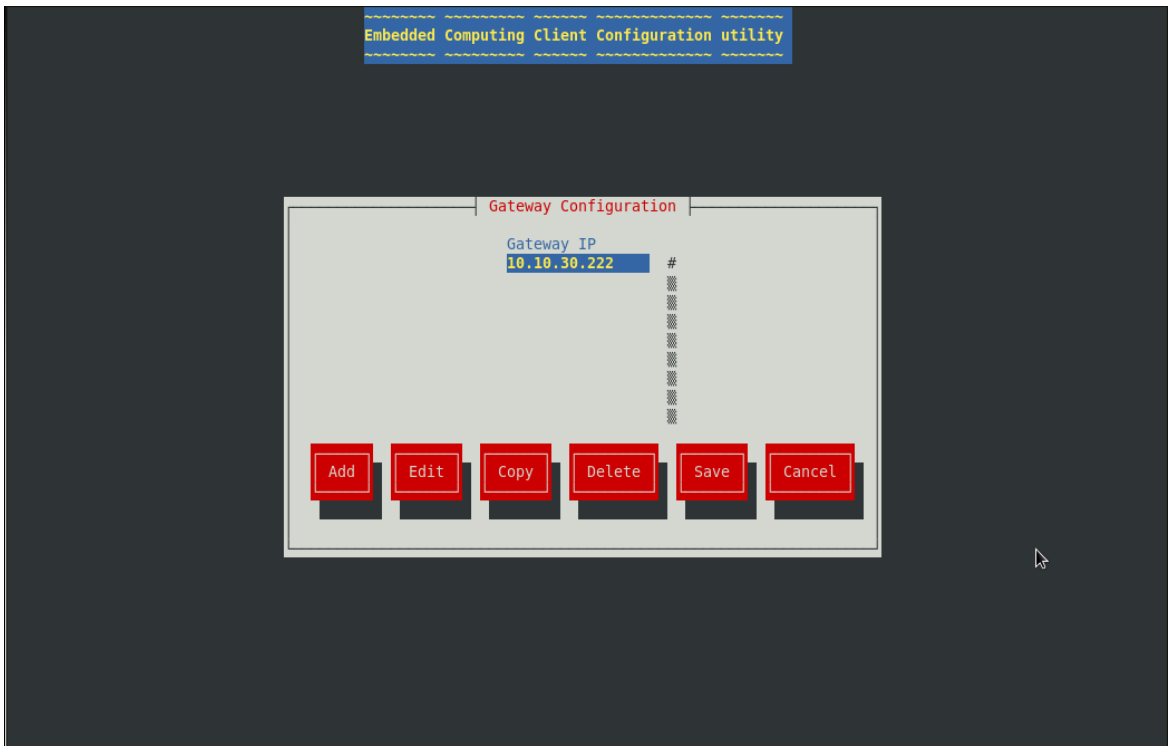
Domain Name for which the thin client needs to be configured

DNS IP Address

IP address of corresponding domain name.

Gateway Settings Page:

The Gateway settings have been managed in this page.



Add

Add a gateway IP to the ECC

Edit

Edit an entry of added gateway IP address

Copy

Copy the gateway IP

Delete

. Delete a gateway entry from gateway table.

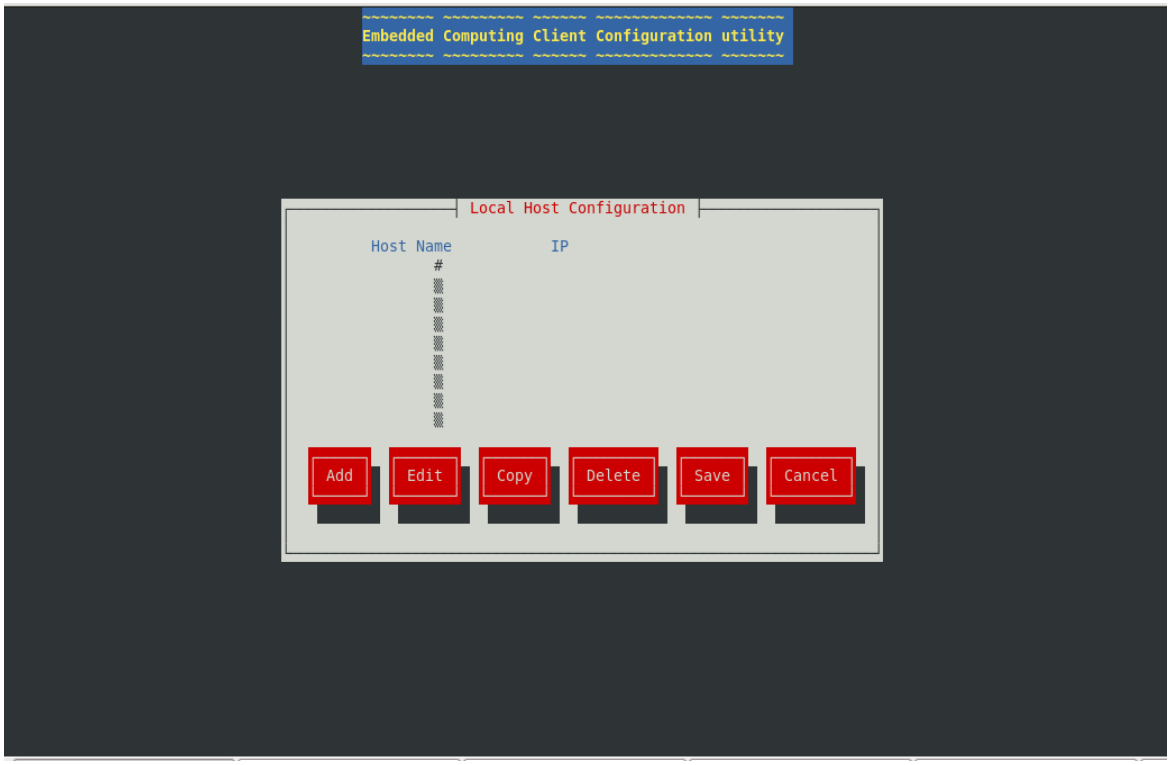
Save

To save the changes

Cancel

To abort the changes

Local Host Settings



Host Name

Provide the hostname of host table entries

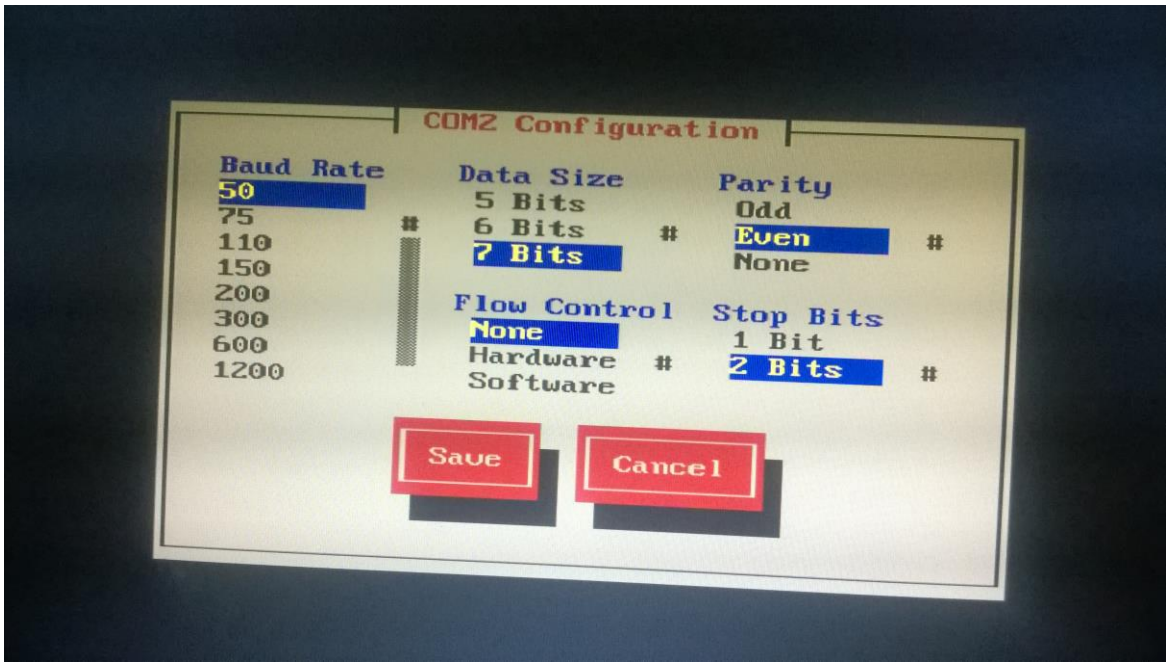
Host IP

Provide the host ip along with the hostname for host table.

COM Port Configuration Page:

The following COM port parameters can be configured using this page:

- Baud Rate
- Flow Control
- Word width
- Parity Enable/Disable
- Stop Bits



Port Settings

Select the COM Port (COM1 or COM2) for which the settings are to be configured.

Baud Rate
Speed of the COM Ports

Data Size
Length of the Data Bits

Stop Bits
Length of the Stop Bits

Parity
Parity bit settings

Flow Control
Flow control of the communication

Services configuration Page:

The following system services can be configured to start and stop using this page:

Telnet
FTP
CRON
LPD
RSH
Rlogin
Rexec
SSH
Client Management Software
Network
vnc
usb
Battery

Telnet

Option to Selecttelnet service.

FTP

Option to Select ftp services

CRON

Option to Select cron services

LPD

Option to Select lpd services

RSH

Option to Select remote shell services

Rlogin

Option to Select remote login services

Rexec

Option to Select rexec services

SSH

Option to Select Secure Shell services

Client Management Software

Option to Select Client Management Software services

Network

Option to Select network services

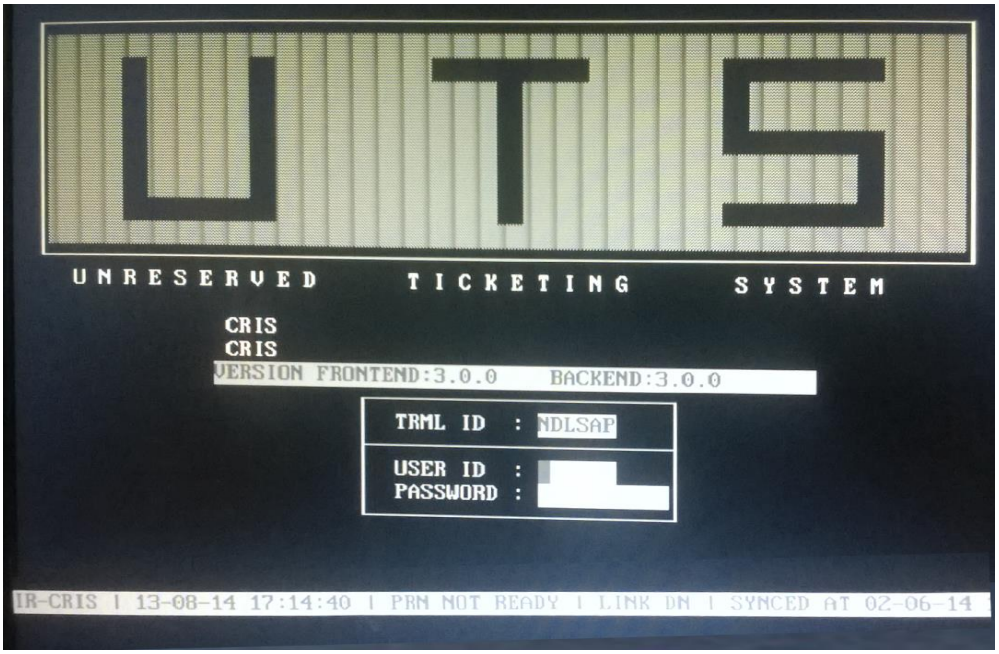
VNC

Option to Select vnc services

4 USER CONFIGURATION

4.1 UTS User Configuration

While Booting ECC, UTS user will be automatically logged in. Pl. press Alt+F1 to switch to UTS application. The UTS application always runs on the first console(/dev/tty1). UTS application login screen will appear as follows.


UNRESERVED TICKETING SYSTEM
CRIS
CRIS
VERSION FRONTEND:3.0.0 BACKEND:3.0.0
TRML ID : NDLSAP
USER ID :
PASSWORD :
IR-CRIS | 13-08-14 17:14:40 | PRN NOT READY | LINK DN | SYNCED AT 02-06-14

4.2 PRS User Configuration

While Booting ECC, PRS user will be automatically logged in and the Profile manager will appear on the screen as follows.

Within PRS session, only **Activate** tab is provided and users cannot modify any of the parameters of profile configuration.

Profile Name
: Displays the name of the profile (session)

Type
: Displays Session name

Profile Status
: Displays status of a session (Active when Profile is connected)

Users can select the following options in the profile manager.

Activate
: Select to activate the selected profile

End
: Select to close the selected active profile session

View
: Select to view the selected profile

Logoff
: Select to logoff PRS user

Restart
: Select to restart the system.

Note: the PRS application always run on the Second console(/dev/tty2). From other sessions, press Alt+F2 to switch to PRS session.

4.3 Vt320 User Configuration

Vt320 user has administrator privileges and this session is used to configure parameters for PRS Application.

Within Vt320 session, **Activate** and **Modify** tabs are provided and users can modify the parameters of profile configuration.

Profile Name
: Unique name for the session

Type
: Connection type of the session

Startup
: Marked with '**default**' profile for auto start

Users can select the following options in the profile manager.

New
: Select add a new profile or session. Max 7 sessions allowed,

Modify
: Select to modify the configuration of the selected profile

Duplicate
: Select to duplicate the profile

Remove
: Select the option to remove the selected profile

Setup
: Displaying the setup tab.

4.3.1 Configure a New Profile

On selecting the **New** button in **Modify** tab, the following screen will appear to configure

Description *
: Unique name of the profile

Server Name
: Server IP address to connect

Term Type
: Terminal emulation type normally vt220

Connection by
: Mode of communication with the server either RS232 or RJ45

Char Size
: Character Size on the application

Cursor keypad
: Appearance of the cursor

Caps Lock
: To provide caps lock to be **normal** or **Always on** during the entire session.

NumLock
: provide caps lock to be **normal** or **Always on** during the entire session.Answerback
Option to Enter Answer Back

Rows
: Total No of lines to be displayed in the application

Columns
: Total No of characters allowed per line

Mouse Cursor
: Type of mouse cursor to e displayed on screen

Auto Start
: Automatic start of the session during login

Auto Wrap
: Option to automatic wrapping up to next line when cursor reaches end of the line.

Background
: Background color for the session.

Foreground
: Foreground color for the session.

Decimal Sign
: Telnet session decimal sign

Cursor Keypad
: Option to Enable Keypad Option

Press Ok button to add this profile. After configuration, the profiles will be listed in the Profile manager.

4.3.2 Modifying a profile

Select a profile from Profile manager then click Modify button

Then following window will appear with the same configuration

After editing press ok to save a new configuration

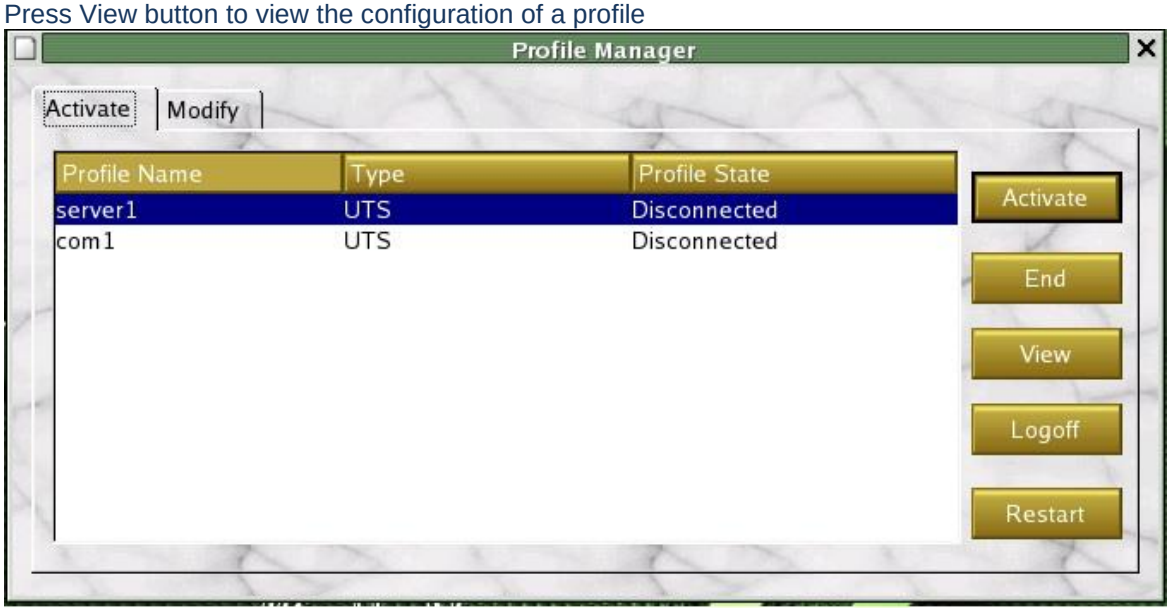
Profile Manager
Activate
Modify
Profile Name
Type
Startup
server1
UTS
Default
com1
UTS
New
Modify
Duplicate
Remove
Setup

4.3.3 Removing a profile

Press Remove Button to delete a profile

4.3.4 Viewing a profile

Press View button to view the configuration of a profile



It will display the profile configured.

You are not allowed to edit any field abut you can only view configuration in this page

4.3.5 Activate a profile

Select a Profile and click Activate Button to connect a profile

The selected server gets connected.

4.4 sybuts user

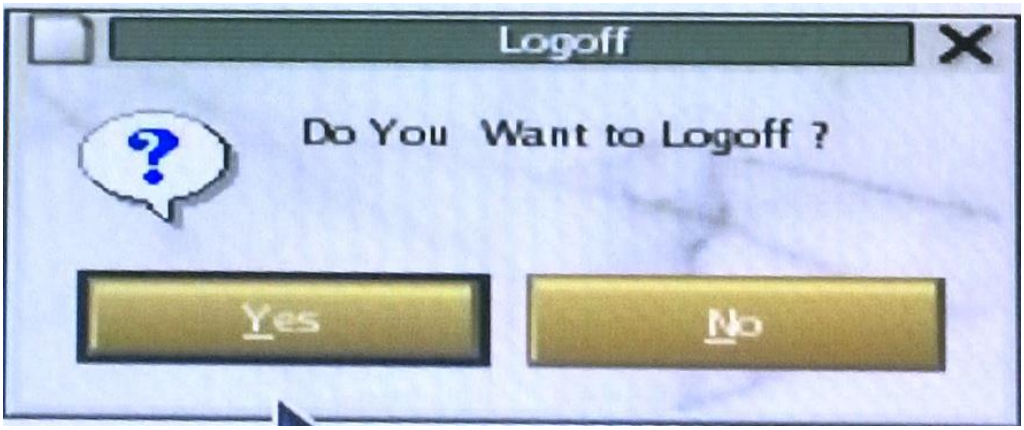
This user (sybuts) is provided for Sybase database operations.

4.5 root user

root user may login in one of the consoles for administrative operations (ipconfigration, route, crond, etc). For any parameter, that need to be saved in the ECC, pl. configure through Setup Menu. Linux command set may not ensure persevering the terminal status for next reboot.

5 LOGOFF

Select **Logoff** to logout from the session. The below screen appears. Select **Yes** or press **'y'** to logoff or **No** or '**n**' to abort.



6 Reboot

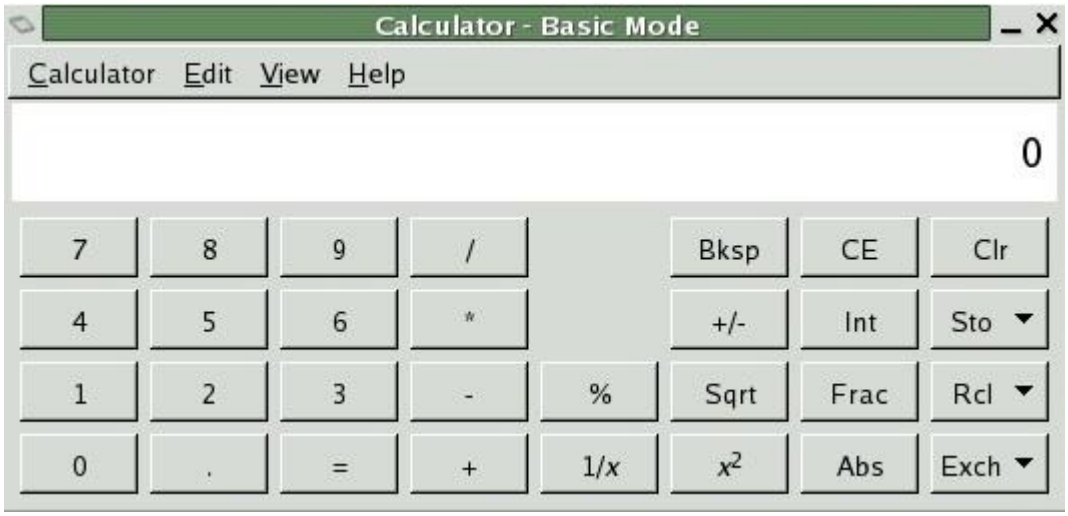
The below window will appear when **Restart** button is pressed for restarting system or window manager

Login as root user in the console and give **reboo**t command to reboot ECC and **poweroff** to shutdown ECC. Alternatively, Press the power button once to power off the ECC.

Abruptly powering off (without following the procedure mentioned above), may lead to data corruption in the storage media.

7 CALCULATOR

Providing the Alt+G will invoke the calculator as follows,



Options are self explanatory.

8 SERIAL PORT (RS-232 DE9) PIN OUT

DE-9 Pin	Signal Name	Dir	Description
1	DCD	←	Data Carrier Detect
2	RXD	←	Receive Data
3	TXD	→	Transmit Data
4	DTR	→	Data Terminal Ready
5	GND	—	System Ground
6	DSR	←	Data Set Ready
7	RTS	→	Request to Send
8	CTS	←	Clear to Send
9	RI	←	Ring Indicator

Note: The serial port pin assignments are same as that of PC standard.

9 PARALLEL PORT INTERFACE

Pin	Name	Dir	Description
1	/STROBE	→	Strobe
2	D0	→	Data Bit 0
3	D1	→	Data Bit 1
4	D2	→	Data Bit 2
5	D3	→	Data Bit 3
6	D4	→	Data Bit 4
7	D5	→	Data Bit 5
8	D6	→	Data Bit 6
9	D7	→	Data Bit 7
10	/ACK	←	Acknowledge
11	BUSY	←	Busy
12	PE	←	Paper End
13	SEL	←	Select
14	/AUTOFD	→	Autofeed
15	/ERROR	←	Error
16	/INIT	→	Initialize
17	/SELIN	→	Select In
18	GND	—	Signal Ground
19	GND	—	Signal Ground
20	GND	—	Signal Ground
21	GND	—	Signal Ground
22	GND	—	Signal Ground
23	GND	—	Signal Ground
24	GND	—	Signal Ground
25	GND	—	Signal Ground

BIOS	Basic Input Output System
DOM	Disk On module
RAM	Random Access Memory
SO-DIMM	Small Outline dual inline memory module
SDRAM	Synchronized Dynamic Random Access Memory
VGA	Video Graphics Adapter
UART	Universal Asynchronous Reciver/Transmitter
USB	Universal Serial Bus
ANSI	American National Standards Institute
ASCII	American Standard Code for Information Interchange
CMOS	Complementary Metal-Oxide Semiconductor
COM1,COM2	The name assigned to the serial & Communication ports
CPU	Central Processing Unit
CRT	Cathod Ray Tube
Cursor	A small Blinking rectangle or line that indicates the current position of the display screen
AC	Alternating Current Electric Current that reverse its direction of flow at regular intervals
LED	Light Emitting Diode
LCD	Liquid Crystal Display
ROM	Read Only Memory
SSH	Secure Shell
RSH	Remote Shell
rlogin	Remote Login
Adapter	A device that provides an interface between dissimilar electronic devices

Boot	Short form of boot strap
BPS	Bits Per Second
Buffer	The portion of computer memory where data is stored temporarily
Centronics	The printer manufacturer whose method of data transmission between parallel printer and computer
Byte	The Representation of single Charcter
DISPLAY	Image Producing Device used to view computer output
MENU	A software Interface that displays list of options on screen
PORT	An Electrical Connection through which the computer can sends and receives to and from devices or other computer
DATA	Information that is factual, measurable or statical that a computer can process store or retrieve it.
DC	Direct Current the Electrical current flows in one direction
GND	Ground ,An RS-232 Signal used in exchange of data between a computer and a serial device.
Bus	An interface for transmission of data signal electrical power
VESA	Video Electronic Standard Association
Applications	A group of programs that together are used for a specific task
Binary	The base two number system composed of zeros and ones (on off) used in most digital computers
Chip	A small Semiconductor Devices containing computer logic circuit for processing memory input/output functions & controlling other chips also
Keyboard	An input device containing switches that are activated y manually pressing marked keys.Each keystroke activates a switch that transmits the specific code to the computer